

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. In the claims

As shown in the foregoing LIST OF CURRENT CLAIMS, the claims have been amended to more clearly point out the subject matter for which protection is sought.

A. Claim amendments

Claim 1 is amended to recite the step of calculating cell size for a unit cell of a 2-dimensional code providing storage of said storage information in said 2-dimensional code having said specified code size, to recite the step of creating laser-marking information for forming said 2-dimensional code having said specified code size, and to recite laser marking said 2-dimensional code have said specified code size.

Claim 2 is amended to clarify that the cell size of the unit cell is changed according to change of said storage information.

Claim 3 is amended to recite specifying a number of said unit cells and the cell size of said unit cell is calculated based on said specified code size and said specified number of said unit cells.

Claim 4 is amended to correct minor informalities and to recite a data size converting step of converting said 2-dimensional code formed in said 2-dimensional-code-conversion- step into data for said 2-dimensional code having said size set in said parameter-setting step, and to recite a laser-marking step of laser marking said 2-dimensional code having said size set in said parameter-setting step directly on said part by a laser marker.

Claim 5 is amended to correct a minor informality.

Claim 7 is amended to recite calculating the cell size of said unit cell, based upon said code size and said storage information acquired by said information-acquisition means, to provide storage of said storage information in said 2-dimensional code having said acquired code size and a process of creating laser-marking information for forming said 2-dimensional code having said acquired code size, based on said code size, said storage information, said cell size and said step size or number of dots, and a laser marking means for performing laser marking of said 2-dimensional code having said acquired code size based on said laser-marking information.

Claim 9 is amended to clarify that different laser-marking information having different density is created based on change information for said step size or number of dots.

Claim 10 is amended to correct minor informalities and to recite calculating the cell size based on said code size and said number of cells acquired by said information-acquisition means, and a process of creating laser-marking information for forming said 2-dimensional code having said acquired code size and performing laser marking of said 2-dimensional code having said acquired code size.

Claim 11 is amended to correct a minor informality.

Claim 12 is amended to correct a minor informality and to clarify that different laser-marking information having different density is created based on change information for said step size or number of dots.

Claim 13 is amended to minor informalities and to recite a means for converting said 2-dimensional code to data for said 2-dimensional code having a size set according to said part/parts and for performing laser marking of said 2-dimensional code directly on said part/parts.

Claims 6 and 8 are left unchanged.

It is respectfully submitted that no new matter is added by way of the amendments to the claims.

Entry of the LIST OF CURRENT CLAIMS is respectfully requested in the next Office communication.

B. Claim objections

Reconsideration and removal of the objection to claim 11 is respectfully requested, in view of the amendments to claim 11, on the basis that the noted informality has been corrected.

Accordingly, removal of the objection to claim 11 is respectfully requested.

2. Rejection of claims 1-3 and 7-12 under 35 U.S.C. § 102(e) as being anticipated by U.S. publication no. 2004/0046024 (*Natsukari et al.*)

Reconsideration of this rejection is respectfully requested, in view of the amendments to claims 1, 7, and 10, on the basis that the *Natsukari* publication fails to disclose each and every recited step or element of amended claims 1, 7, and 10. The remaining claims 2, 3, 8, 9, 11, and 12 depend from either claim 1, 7, or 10, and are therefore patentable as containing all of the recited steps or elements of claims 1, 7, or 10, as well as for their respective recited steps or features.

By way of review, the embodiment of amended claim 1 includes the steps of specifying storage information to be written in a 2-dimensional code, the step of calculating cell size for a unit cell of the 2-dimensional code providing storage of the storage information, the step of creating laser marking information for forming the 2-dimensional code, based on said storage information, and the step of laser marking said 2-dimensional code based on said laser-marking information.

Similarly, the embodiment of amended claim 7 requires an information-acquisition means for acquiring storage information that is to be written in a 2-dimensional code, a calculation means for calculating cell size of a unit cell, based at least upon the acquired storage information, in order to provide storage of the storage information in the 2-dimensional code, and further creating laser-marking information for forming said 2-dimensional code, based on said storage information, and a laser

marking means for laser marking the 2-dimensional code based on said laser-marking information.

The embodiment of amended claim 10 similarly requires an information-acquisition means for acquiring the number of unit cells of a 2-dimensional code and storage information that is to be written into the 2-dimensional code, a calculation means for calculating cell size based upon code size and number of cells, and a process of creating laser-marking information for forming said 2-dimensional code having said acquired code size, based on said code size, said storage information, said cell size, and said dot step size or number of dots, and a laser-marking means for performing laser marking of the 2-dimensional code based on said laser-marking information.

Accordingly, in each of the embodiments of claims 1, 7, and 10, a 2-dimensional code having a predetermined code size is formed by calculating a cell size based upon the code size and storage information or number of cells. Thus, it is possible to form a 2-dimensional code having a desired code size regardless of the amount of information to be stored, and thus, it is possible to attach the desired information as a 2-dimensional code in a very small area.

In contrast to each of the above embodiments recited in amended claims 1, 7, and 10, the *Natsukari* publication fails to disclose at least specifying or acquiring storage information to be stored in a 2-dimensional code, calculating cell size of a unit cell, based at least upon the specified or acquired storage information, or creating laser marking information for forming the 2-dimensional code, based on said storage information, and laser marking said 2-dimensional code based on said laser-marking information. Further, the *Natsukari* publication discloses that the theoretical symbol size (or code size) changes as the volume of information changes, thus, as discussed below, codes that cannot be created in a defined space are encountered.

The *Natsukari* publication discloses a 2-dimensional code reader setting method, a 2-dimensional code reader, and a 2-dimensional code reader setting program (title; paragraphs [0002] and [0009]). The main objects of the code reader

setting program described in the *Natsukari* publication are to allow a user to input specification details of a theoretical 2-dimensional code, for which the code reader setting program will calculate whether such specification details of a theoretical 2-dimensional code is possible, in order to further calculate an attachment specification for the code reader (paragraphs [0010]-[0021], [0025], [0027], [0085], [0140]-[0164], and in particular paragraphs [0102]-[0104], [0108], [0113]). In certain instances, the code specifications would not allow the creation of a 2-dimensional code in a given space, in a given manner, for a given volume of information (paragraphs [0102]-[0104], [0108], [0113]). This is in contrast to the embodiments of amended claims 1, 7, and 10, which make it possible to attach desired information as a 2-dimensional code in a very small area.

Further, while the printing of 2-dimensional codes is discussed in general in the *Natsukari* publication in relation to a theoretical 2-dimensional code (which may or may not be possible to create) having certain characteristics such as a code size, a cell size, a printable space, data type, and data volume, there is no discussion in the *Natsukari* publication of setting or acquiring actual storage information to be stored in a 2-dimensional code.

Furthermore, the entire thrust of the program described in the *Natsukari* publication is towards calculating an attachment specification for a code reader. There is no disclosure in the *Natsukari* publication of actually laser marking a 2-dimensional code, let alone creating laser-marking information and laser-marking a 2-dimensional code based upon the laser-marking information. Instead, as discussed above, code specifications are calculated or input for theoretical or possible 2-dimensional codes that could be created using printers having certain DPI ranges and defined printable areas (paragraph [0103]). While there is an option to describe the possible printing patterns, which printing patterns may be achieved through laser marking or direct marking (paragraph [0098]), there is no discussion of providing or acquiring information to actually be stored in a 2-dimensional code, and further, no

discussion of utilizing the code specifications to create laser-marking information in order to actually laser-mark a 2-dimensional code.

Since there is no discussion of providing or acquiring information to actually be stored in a 2-dimensional code, and further no discussion of utilizing the code specifications to actually laser-mark a 2-dimensional code, it further follows that the *Natsukari* publication fails to disclose creating laser-marking information based upon storage information, and further laser marking a 2-dimensional code based upon the laser-marking information, as is required by all of amended claims 1, 7, and 10.

Accordingly, *Natsukari* publication fails to disclose at least specifying or acquiring storage information to be stored in a 2-dimensional code, calculating cell size of a unit cell, based at least upon the specified or acquired storage information, or creating laser marking information for forming the 2-dimensional code, based on said storage information, and laser marking said 2-dimensional code based on said laser-marking information, as is required by amended claims 1, 7, and 10. Thus, since the *Natsukari* publication fails to disclose every step or feature of amended claims 1, 7, and 10, withdrawal of this rejection is respectfully requested.

As mentioned above, applicants submit that independent claims 1, 7, and 10 are patentable and therefore, claims 2, 3, 8, 9, 11, and 12, which depend from either claims 1, 7, or 10, are also considered to be patentable as containing all of the steps or elements of claims 1, 7, or 10, as well as for their respective recited steps or features.

3. Rejection of claims 4, 6, and 13 under 35 U.S.C. § 103(a) as being unpatentable over U.S. publication no. 2004/0046024 (*Natsukari et al.*) in view of U.S. publication no. 2004/0094729 (*Struye et al.*)

Reconsideration of this rejection is respectfully requested, in view of the amendments to claims 4 and 13, on the basis that the proposed combination of the *Natsukari* and *Struye* publications fails to disclose each and every recited step or element of amended claims 4 and 13. The remaining claim 6 depends from claim 4,

and is therefore patentable as containing all of the recited steps claim 4, as well as for its respective recited steps.

By way of review, the embodiments of amended claims 4 and 13 require acquiring manufacturing history of a part or a plurality of parts, converting data including an ID number for identifying manufacturing-history information or manufacturing-history information itself for a part into a 2-dimensional code and converting the 2-dimensional code to data for a 2-dimensional code having a size set in a parameter setting step or according to the part/parts, and laser marking the 2-dimensional code having the set size directly on the part/parts.

The deficiencies of the *Natsukari* publication are discussed above in detail. By way of reiteration, the *Natsukari* publication fails to disclose laser marking a 2-dimensional code onto a part. Further, as discussed above in relation to storage information, the *Natsukari* publication fails to disclose acquiring manufacturing-history information for a part. Since the *Natsukari* publication fails to disclose acquiring such information, the *Natsukari* publication also fails to disclose converting data including an ID number for identifying manufacturing-history information or manufacturing-history information itself for a part into a 2-dimensional code and converting the 2-dimensional code to data for a 2-dimensional code having a size set in a parameter setting step or according to the part/parts, and laser marking the 2-dimensional code having the set size directly on the part/parts.

While the *Struye* publication does disclose marking an item with manufacturing time (paragraph [0080]) there is simply no disclosure in the *Struye* publication of converting data including an ID number for identifying manufacturing-history information or manufacturing-history information itself for a part into a 2-dimensional code and converting the 2-dimensional code to data for a 2-dimensional code having a size set in a parameter setting step or according to the part/parts, and laser marking the 2-dimensional code having the set size directly on the part/parts.

Thus, neither the *Natsukari* publication nor the *Struye* publication disclose converting data including an ID number for identifying manufacturing-history

information or manufacturing-history information itself for a part into a 2-dimensional code and converting the 2-dimensional code to data for a 2-dimensional code having a size set in a parameter setting step or according to the part/parts, and laser marking the 2-dimensional code having the set size directly on the part/parts, as is required by amended claims 4 and 13.

Accordingly, the proposed combination of the *Natsukari* and *Struye* publications fails to disclose converting data including an ID number for identifying manufacturing-history information or manufacturing-history information itself for a part into a 2-dimensional code and converting the 2-dimensional code to data for a 2-dimensional code having a size set in a parameter setting step or according to the part/parts, and laser marking the 2-dimensional code having the set size directly on the part/parts, as is required by amended claims 4 and 13.

Thus, since the proposed combination of the *Natsukari* and *Struye* publications fails to disclose every step or feature of amended claims 4 and 13, a *prima facie* case of obviousness cannot be maintained with respect to amended claims 4 and 13, and withdrawal of this rejection is respectfully requested.

Further, since the *Natsukari* publication is directed solely to a 2-dimensional code reader and a 2-dimensional code reader program, a skilled artisan would not have though to combine the teachings of marking an item, as described in the *Struye* publication, with the reader of the *Natsukari* publication. Accordingly, a *prima facie* case of obviousness cannot be maintained with respect to amended claims 4 and 13, and withdrawal of this rejection is respectfully requested.

As mentioned above, applicants submit that independent claim 4 is patentable and therefore, claim 6, which depends from claim 4, is also considered to be patentable as containing all of the steps of claim 4, as well as for its respective recited steps.

4. Rejection of claim 5 under 35 U.S.C. § 103(a) as being unpatentable over U.S. publication no. 2004/0046024 (*Natsukari et al.*) in view of U.S. publication no. 2004/0094729 (*Struye et al.*) and further in view of U.S. publication no. 2003/0224256 (*Endo et al.*)

Reconsideration of this rejection is respectfully requested, in view of the amendments to claim 4, from which claim 5 depends, and the shortcomings of the proposed combination of the *Natsukari* and *Struye* publications discussed above, on the basis that the *Endo* publication fails to provide for the shortcomings of the proposed combination of the *Natsukari* and *Struye* publications.

The *Endo* publication merely describes a continuous irradiation position of a laser beam (paragraph [0094]), and does not cure the deficiencies of the proposed combination of the *Natsukari* and *Struye* publications discussed above.

Accordingly, withdrawal of this rejection is respectfully requested.

5. Conclusion

As a result of the amendment to the claims, and further in view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicants' attorney, the examiner is invited to contact the undersigned at the numbers shown below.

BACON & THOMAS, PLLC
625 Slaters Lane, Fourth Floor
Alexandria, Virginia 22314-1176
Phone: (703) 683-0500
Facsimile: (703) 683-1080

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Respectfully submitted,



PATRICK M. BUECHNER
Attorney for Applicants
Registration No. 57,504